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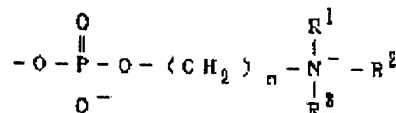
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(54) BIOCOMPATIBLE POLYMER/SILICA GEL HYBRID BODY AND ITS PRODUCTION

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain a biocompatible polymer/silica gel hybrid body suitable for medical treating materials such as a medical device and an artificial organ, and further to provide a production method thereof.

SOLUTION: This biocompatible polymer/silica gel hybrid body comprises (A) a biocompatibility polymer obtained by radically polymerizing (a1) a hydrophilic monomer having a phosphorylcholine-analogous group represented by the general formula (R1, R2, and R3 are each same or different hydrogen atom or a 1-4C alkyl group; n is an integer of 2-4), and (a2) a hydrogen bonded receptor-containing monomer, and (B) a polymer obtained by hydrolytically polymerizing (b1) a hydrolytically polymerizable metallic oxide having a silanol group.



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* NOTICES *

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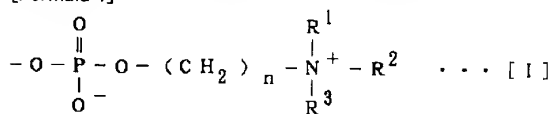
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- 2.*** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The following general formula as an A component [I]

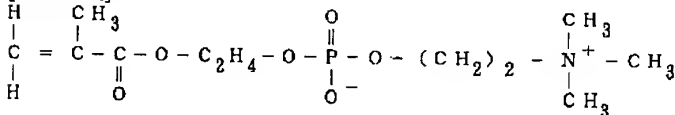
[Formula 1]



(However, among a formula, R1, R2, and R3 may show a hydrogen atom or the alkyl group of carbon numbers 1-4, and they may be the same or a different radical.) n is the integer of 2-4. The biocompatibility polymer / silica gel hybrid object which consists of a biocompatibility polymer (A) which comes to carry out the radical polymerization of the hydrophilic monomer (a1) which has the phosphorylcholine similar radical shown, and the hydrogen bond acceptor content monomer (a2), and an inorganic polymer which comes to carry out the hydrolysis polymerization of the hydrolysis polymerization nature metallic oxide (b1) which has a silanol group as a B component.

[Claim 2] The hydrophilic monomer (a1) which constitutes A component is the following formula [II].

[Formula 2]



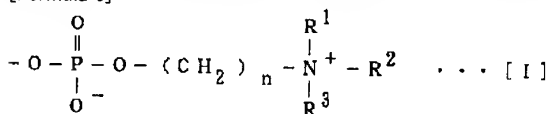
· · · [II]

The biocompatibility polymer / silica gel hybrid object according to claim 1 whose hydrogen bond acceptor content monomer (a2) it is 2-methacryloxy-ethyl phosphorylcholine come out of and shown, and is a monomer which has a pyrrolidone radical, an amide group, or a urethane group.

[Claim 3] The biocompatibility polymer / silica gel hybrid object according to claim 1 or 2 whose hydrolysis polymerization nature metallic oxide (b1) which the hydrogen bond acceptor content monomer (a2) which constitutes A component is 2-methacrylic ethyl butyl urethane, and has the silanol group which constitutes the inorganic polymer of B component is a tetra-ethoxy silane.

[Claim 4] The following general formula as a biocompatibility polymer (A) of A component [I]

[Formula 3]



(However, among a formula, R1, R2, and R3 may show a hydrogen atom or the alkyl group of carbon numbers 1-4, and they may be the same or a different radical.) n is the integer of 2-4. The hydrophilic monomer which has the phosphorylcholine similar radical shown (a1), The radical polymerization of the hydrogen bond acceptor content monomer (a2) is carried out, and a biocompatibility polymer (A) is compounded. This biocompatibility polymer (A), The manufacture approach of of the biocompatibility polymer / silica gel hybrid object which consists of carrying out the sol-gel reaction of a silanol group and the hydrogen bond acceptor while forming an inorganic polymer (B), carrying out the hydrolysis polymerization of the hydrolysis polymerization nature metallic oxide (b1) which has a silanol group.

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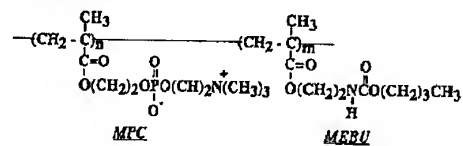
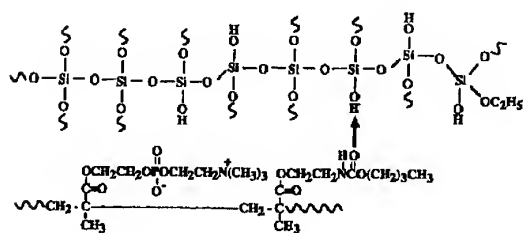
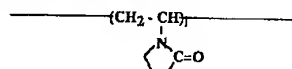
Drawing selection drawing 1poly(MPC/MEBU) (PMBU)Poly(N-vinyl-2-pyrrolidone) (PVPy)

図1 重合体の化学式

[Translation done.]